

3/2 NORMALLY CLOSED MODULEAbstract

A 3/2 normally closed module includes a main body, a housing and a magnetically energizable coil. The main body includes a bore, an armature and a rod.

- 5 The housing includes first and second valve seats and is configured to receive a first and second ball. The housing also includes a first, a second and a third port. When the module is in an energized state, current flows through the coil, generating a magnetic field. The magnetic field forces the armature against the rod, which in turn, forces the first ball to engage the first valve seat. As the first ball engages the first
- 10 valve seat, the first ball forces the second ball to disengage from the second valve seat. As a result, a fluid flow path is created between the first and second ports. When the module is in a de-energized state, a spring, disposed between the main body and the second ball, forces the second ball to engage with the second valve seat. When the second ball engages the second valve seat, the second ball forces the first
- 15 ball to disengage from the first valve seat. As a result, a fluid flow path is created between the first and third ports.